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ABSTRACT

The use of two types of commercially available Apple computer educational software in English for the development of accuracy and fluency in students of English as a second language is described. One type of program is aimed at the drilling and practice of grammar in English. Some of these programs have interesting formats and allow the teacher to edit their content easily to accommodate the student's needs. The second program type is the adventure game, which is found to be inherently attractive to students and to promote lively small-group interaction. This type is recommended for adaptation aimed at the development of communicative fluency. (MSE)

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COMPUTER ASSISTED LANGUAGE LEARNING: USING L1 SOFTWARE WITH L2 STUDENTS

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**** ABSTRACT ****

This paper describes the use of two types of commercially available APPLE computer educational L1 software for the development of accuracy and fluency in EFL students. One type of L1 education computer program is aimed at the drilling and practice of grammar; some of these programs not only have an interesting format, but also allow the teacher to edit their content easily to fit better the students' needs. Another type can be adapted for the development of communicative fluency; in particular, adventure games not only are inherently attractive to the learner, but they offer a lively way of creating small-group interaction, whereby real communicative language can take place.

(I) INTRODUCTION

One of the most crucial contributions brought forth by the Notional/Functional approach movement of the 70's was the awareness that EFL courses heavily based on grammatical syllabuses, which had hitherto been the center of the TEFL activity, did not necessarily lead students to effective language learning (Wilkins, 1976). It was realized that there is a great deal more to language learning than the mastery of its grammatical system (Widdowson, 1978). As a result, the late 70's saw the production of EFL materials which were almost exclusively aimed toward the development of these communicative functions, but often at the expense of the grammatical component in the syllabus (cf. Abbs & Freebairn, 1977). The pendulum has swung back, however, and the early 80's saw the establishment of a more satisfactory equilibrium between grammar and these communicative features (cf. Abbs & Freebairn, 1983).

In the light of these two different but complementary aspects of EFL, this paper will discuss the use of computer software for developing accuracy and fluency. Developing "accuracy" involves activities in which the students' concern focusses on making exact linguistic combinations of a phonological, lexical, and syntactic nature. Developing "fluency," on the other hand, is what students do when they carry out activities which are focussed on those communicative features (including appropriateness) which speakers use in order to convey their message effectively. In a contemporary communicative approach, the development of grammatical accuracy is as important as developing the ability to be fluent in a foreign language (Edmundson, 1983; Brumfit, 1984)

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(II) GRAMMATICAL ACCURACY AND THE COMPUTER.

A) ADVANTAGES OF COMPUTERS.

Computers can be powerful tools towards the realization of the student's NEEDS and WANTS in individualized instruction. As far as grammatical accuracy is concerned, the computer can very effectively handle the drilling and practice of linguistics items in interesting and more personal ways for various reasons.

- Inherent attraction: To begin with, the inherent attraction of computers can motivate the EFL student to study further by practicing discrete linguistic items in manners which are more interactive than the traditional sheet of paper. Instant feedback is perhaps one of the major new features of this type of instructional technology.

- Screen presentation: These machines cannot easily be surpassed in their ability to deal with the presentation of educational material in a lively and challenging way. Computers offer not only animated graphics, color and sound (something the video can also do), but they can also generate variations on the central thematical presentation as a result of their ability to interact with the students (something the video by itself cannot do). The colors and sound effects, for instance, can become sentitive to the way the user enters information at the keyboard.

- Student control: Some students welcome the opportunity the computer gives them to work on grammar exercises and rules in their own learning fashion. This is because the computer has the intrinsic capacity to let students not only choose what, how much, and in what order to study, but also to monitor their pace and the degree of difficulty of the material. Furthermore, when the feedback the students get does not correspond to their expectations, they can have the choice of an explanation if they so wish.

- Individualized contexts: Unlike a normal sheet of paper or a textbook, the machine can even let students choose from a set of topics (i.e., music, sports, cooking, etc.) the one they prefer in order to practise a given grammatical point (c.f. GRAMMAR MASTERY SERIES). This seems to be an effective way of enhancing motivation given that the students can practice a set of linguistic items within a context of their own choice. Textbooks cannot match this capacity efficiently.

- Interesting and challenging repetitions: Since the internalization of some structural aspects of the foreign language may involve activities of a rather repetitive nature, the computer has a further advantage. By letting the machine take over the task of dealing with grammatical items in lively and challenging ways, the teacher can concentrate on creating and conducting communicative activities which present day computers cannot by themselves do: group dynamics, for instance, and other tasks requiring highly complex discourse interaction.

These machines are never judgemental, they never get tired or bored, they are never in a bad mood; indeed, they are there, like slaves, always ready to be used by their masters. Moreover, computers have the capacity not only to present material many times over, but also do it with interesting variations which can be sensitive to the inputs provided by the user. Johns has suggested ways in which the questions or problems could be constructed not by the programmer in advance and placed in the program, but instead be generated by the computer itself in response to the input given by the user (Johns, 1982a; Higgins & Johns, 1984). The machine could present the student with unpredictable content material with every repetition .

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B) THE CURRENT LACK OF EFL SOFTWARE.

These days we are still faced with the problem that EFL software is not being produced with the same speed with which educational institutions are buying microcomputers. Perhaps the most obvious solution would be to set up joint projects whereby programmers and experienced teachers work together, but, with some few exceptions, this does not seem to be happening in our field.

At least in Brazil, this lack of joint effort is explained by the abyss existing between computer programmers and language teachers. Computer programmers, in general, have little interest in EFL educational projects because they cannot immediately see the relevance of computers in a foreign language school. The subjects which Brazilian programmers study in school have no connection with language nor with educational matters. Moreover, the vast majority of computer programmers are busily working in the world of industry and commerce, where the best contracts are offered.

Consequently programmers in Brazil are not exactly knocking at the doors of teachers' rooms to offer any professional help. Contacts should be initiated the other way around; but very few teachers are prepared to do this. Because of the training they have had, which usually is entirely deprived of scientific subjects, many language teachers tend to regard computer programmers as extraterrestrial beings (and the highly specific and technical terminology which programmers use when they speak only serves to make matters worse!). The desired joint programmer-teacher cooperation, which could qualify as "encounters of the third kind", will no doubt happen eventually; but, in Brazil, this will take some time to occur.

C) TREATING SOFTWARE AS SHELLS WITH VARIABLE CONTENT.

Another possible solution would be to consider the vast amount of educational material available for L1 students and to analyze its potential in the EFL classroom. Obviously the content is often highly unsuitable for our purposes, yet the form of some of them offers some interesting EFL possibilities. And this brings us to a rather unique feature of CALL.

Perhaps one of the valuable features of computers is the relative ease with which the content of a program can be edited while keeping the form. Furthermore, even the form can be altered to fit better the teacher's imagination and creativity. The change of content is normally achieved by analyzing the computer program and altering various technical features, such as the files which the program accesses, and the values of the string variables.

But this is easier said than done. Commercial organizations invest a great deal of time and effort to preclude any possibility that the user might find out how the program works. Almost all educational software comes protected and "locked." What this means is that, unless you are a "computer wiz" with highly sophisticated knowledge of both software and hardware technology, programs cannot be altered in any way. Moreover, even if you somehow managed to "unlock" the program, you are faced with the legal penalties of copyright infringement. In any case, the improvements made cannot be affectively disseminated.

Apparently commercial organizations, helped by lawyers and all their legal paraphernalia, have not yet been able to make a distinction between the clearly unethical practice of reproducing copyrighted material to give, or (worse still) to sell, to others, and honest academic research which is constantly seeking the improvement of educational pedagogy. As a result of this regrettable situation, which does very little to the advancement of CALL, teachers are being deprived of the very essence of this new type of educational

technology: flexibility and adaptability. Consequently computer programs are being treated as textbooks: Take those rigid lesson contents as they are, or leave them. This is a clear case of brand new technology of the 1980's being used only for traditional approaches.

D) PUBLIC DOMAIN SOFTWARE AND BUILT-IN EDITORS.

Fortunately this situation has its exceptions. One of them is public domain software. These programs "have the advantages of costing virtually nothing and of allowing the user to make any adaptations which may be deemed necessary" (Biggie, 1984). However, it is not always easy to find programmers willing to make the necessary changes, nor do many teachers have the knowledge needed to carry out such a task.

Another possible solution can be found in commercial software. Within the enormous variety of "educational" courseware for native speakers of English, some programs exist which include a built-in editor. This is a special program included in the disk which allows the user to write new contents to be used with that particular software package. These L1 programs offer a partial solution to the current lack of EFL software. The greatest benefit is eminently practical: There are probably many more experienced EFL teachers willing to follow the straightforward instructions on how to use the editor included in the diskette, than there are ones who are prepared to put in the time necessary to learn computer programming in order to write their own lessons, or adapt from public domain.

It then follows that the most crucial point to consider when evaluating new software is whether or not it has a built-in editor. If it does, then we can proceed to examine its performance and consider its potential in our classrooms. Underwood says: "if the package cannot be modified or adapted in any way by the techer, it had better be very, very good." (Underwood, 1984:94). With some notable exceptions, it looks as though we may have to wait a long time before we find "very, very good" packages.

E) OUR EXPERIENCE IN BRAZIL.

At the Centro Eletronico de Linguas (CEL-LEP), we have been using three programs which focus on the development of grammatical accuracy and contain built-in editors. In all three cases the original contents have been entirely ignored and new materials, more suitable for the particular EFL needs of our situation, have been specially written.

1) WORD ATTACK! is a four-part vocabulary building program designed to teach lexical items in context. One part presents the new vocabulary, together with an explanation and an example in context. Two other parts deal with multiple choice and blank-filling activities in various forms. The last part, which is particularly appealing to the students, is a vocabulary game loosely based on the popular SPACE INVADERS. It involves a reasonable degree of motor coordination on the part of the students to launch a rocket towards the correspondig word, while at the same time it requires the ability to associate words with synonyms learned in the lesson. Many students go immediately to this section of the lesson. But soon they realize that the only way to get a better score is "to do a bit of studying", which is the aim of the other three parts of the lesson. With WORD ATTACK! students learn while playing a game, a situation which has been pointed out as highly desirable in CALL (Johns, 1982b).

2) VERB USAGE is a more traditional program, but it includes an editor flexible enough to allow for the practicing of items ranging from prepositions and verbal forms in context, to cohesive devices in small paragraphs.

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3) VOWELS is basically the same VERB USAGE program, plus a subroutine which permits the presentation of a synchronized visual and oral stimulus. This is achieved by means of a cassette control device which is connected to the microcomputer. This extra feature offers the possibility of interesting listening and reading comprehension activities.

There are, though, limitations in these programs. The definition of a lexical item in WORD ATTACK! cannot be longer than 16 characters, and the contextualized examples cannot take up more than three lines. The space available for text presentation in VERB USAGE is only 20 columns by 6 rows. VOWELS permits only one word (or a 13 character phrase) as a written stimulus, and the recording time for the oral stimulus is restricted to 8 seconds.

In spite of these limitations, however, VOWELS, VERB USAGE and WORD ATTACK! make an excellent starting point in a drill-and-practice CALL project. It is unfortunate, though, that the great majority of quality educational software available does not include editors which would enable teachers to insert their own specific contents into otherwise very good educational programs.

(III) COMMUNICATIVE FLUENCY AND THE COMPUTER.

CALL does not necessarily mean individual student-machine interaction where the computer knows all the answers and solemnly evaluates the student's effort as "RIGHT" or "WRONG." One major way of using the computer to develop communicative fluency is to have the machine not in a language teaching situation, but creating circumstances where learning can take place.

Although many authors have mentioned the possibility of group work (Wyatt, 1984; Higgins & Johns, 1984), it is interesting to notice the persisting general assumption that only one student will be working at each microcomputer. This is not only false but undesirable. In our experience most students favour pair work, since they like to discuss and comment on the results of their efforts.

Practicing discovery procedures of a problem solving nature has gained general acceptance in the EFL world. And computer simulations can be particularly effective in this respect since they give students excellent ways of practicing language communicatively by exploring situations which could not be otherwise presented within the classroom environment. Perhaps one of the most promising ways of doing this with computers is through adventure games.

Adventure games are apparently one of the reasons for the exploding popularity of personal computers in the last few years. They are not only fun for the learner, but they also offer the EFL teacher a lively way of creating group dynamics in the classroom. There is a host of adventure games commercially available which lend themselves to the development of communicative abilities in EFL. These games are ideal for group activity since the nature of the task involves joint effort while establishing objectives, discussing strategies, making maps, keeping records, consulting dictionaries and using imagination (Baltra, 1984).

Because all adventure games can take a large number of hours to solve, it is advisable to devise short-term objectives which can be accomplished within one class session. We have also prepared a set of clues which are sparingly given to the groups to avoid frustration and thus maintain the oral exchange of information.

Obviously teachers must know the game very well to make all of the above possible. But the task of having to solve a game before it can be used with the students can be extremely time consuming. Because of this, teachers designing activities of this sort will find Schuette's very detailed descriptions of all the most popular adventure games a valuable source of information (Schuette, 1984).

Games with no graphics stimulate reading and imagination.
Drawings like the ones in MYSTERY HOUSE, for instance, have the advantage of being simple but good enough to make the point of the game. However, more experience is beginning to show that adventure games which do not include graphics seem to lend themselves better to the EFL situation than those programs which use nearly the full screen for graphics and leave only space for two or three lines of text at the bottom.

All-text adventure games, like SCOTT ADAMS' ADVENTURE SERIES, stimulate ones' imagination far beyond the graphics capacity of present day computers. They also bring a very desirable reading component into the EFL activity. This is a good instance of purposeful reading whereby the students have a genuine need to read a text in order to do something specific. The students not only have to make decisions during the game based on their reading comprehension, but they also have to check their understanding with the other group members in order to achieve a consensus of opinion as to what to do next. Furthermore, the immediate feedback feature of the computer will encourage further reading. This is the case, for instance, of VOODOO CASTLE which we have used with advanced students with successful results.

But the written text must be at least within the limits of the students' recognition abilities. Otherwise frustration can easily be generated. The vocabulary range required to play a game like MYSTERY HOUSE (hammer, ladder, candle, picture, etc.) is well within the domain of most frequently encountered English words. On the other hand, games like WIZARDRY and ZORK, successful as they may be for native speakers, may be unsuitable for the average EFL classroom, since they not only deal with a rather specialized world of experience (i.e., dungeons and dragons), but they also require a knowledge of words like potion, stealth, necromancy, lair, and conjurer.

The limited number of commands that games like MYSTERY HOUSE and SCOTT ADAMS' ADVENTURE SERIES will accept add extra flavor to stir the students' imagination. Some teachers have objected to having the students typing instructions like: "open door" or "get note"; or getting computer replies like: "I don't know how to talk a something" when instructed to "Talk to Joe". These features have been considered negative points of this particular program. Underwood says that:

> It is perhaps unfortunate that the program does not employ sufficient parsing strategies to enable it to understand -indeed, insist on- the more grammatical "ouvrez la porte." (Underwood, 1984:56)

He is describing a French translation of the game, and thus objecting to the "ouvrez porte" type of input required to open doors in the house.

However, these apparent caveats of MYSTERY HOUSE can be easily turned into very productive features. Students readily accept the computer's poor linguistic performance and adjust to the noun-plus-object input rules. They also enjoy trying to discover which set of words the game will acknowledge and act on. This is part of the problem-solving nature of the game, and adds flavor to the communicative interaction which is thereby generated. As a result, the game creates a genuine need to review, and perhaps even expand, vocabulary.

On the other hand, games that can accept inputs of the type: "Put the book in the box and pay the cashier", "Please tell me how to get to the post office," or "Where did you buy that shirt?" would undoubtedly be very desirable. But because of the comparatively small amount of memory available in most school microcomputers, it is not technically possible to have adequate graphics, text and a more sophisticated set of acceptable commands like the ones above. This is another good reason to abandon graphics in order to concentrate on the linguistic and textual features of the game. And this is precisely what Infocom has done with games like DEADLINE and ENCHANTER. But the level of complexity these programs have might prove to be too high for the foreign language classroom.

Because the setting of most adventure games is the realm of castles, dungeons and dragons, the type of working vocabulary is irrelevant to the immediate linguistic needs of an ESL student. However the strong point of these activities is that they provide fun opportunities for the group members to do meaningful things with language: i.e., persuade, explain, argue, ask and give information, describe, plan, etc.

However, we could certainly have other types of educational software whereby the EFL student could learn how to order a meal in a restaurant or how to get around in an airport. For many newcomers into an English-speaking country these are activities which truly qualify as adventures. In other words, EFL computer games could deal with situations and texts carefully designed around communicative language readily useful to the foreign student.

Computer adventure games have also generated a great deal of spontaneous communicative writing using a word processor. When a group of evening students found out that there was a morning class also working on the game, they decided to use APPLE WRITER II to leave messages to each other and try to give and ask for written information in English about the various problems the games present. Some typical shorter messages are:

- If you get into the forest, type 'UP' to come back to the house, but don't forget to leave the kitchen door open!
- We have a problem: Everytime we go through the dining room with the lit candle, we start a fire. Can you help?.

We have thus created a lively "electronic bulletin board" which is encouraging genuine writing on the part of the students.

(IV) CONCLUSION

The personal computer is here to stay and teachers are beginning to tap its potential beyond the traditional programmed instruction mode. This is not to say, though, that computers should not be used to drill and practice discrete linguistic items. It is difficult to see how learning styles can be prescribed. Anybody prescribing definite and exclusive roles for the computer seems to be unaware of the fact that so little is known about how individuals learn. Vast amounts of research in the nature of learning have shown the extreme complexity of mind processes. And, as a result, teachers tend to resort to experience and intuition, and judge an approach by its fruits.

Foreign language students do need to internalize the linguistic system of the target language. Some seem to do it via learning, and some via acquisition. And it is the teacher's role to provide an adequate set of resources so that all students can have activities to suit their learning styles. From this point of view, the computer is another tool for the students' use. However, the most important issue is that , unlike in traditional approaches, the student should be in full control of the machine.

Students enjoy doing group work and using the computer as an interactive tool for the development of both linguistic accuracy and communicative fluency. For the development of accuracy we have used commercially available computer programs with built-in editors, thus allowing the teacher to modify their content. For the development of communicative fluency, certain L1 adventure games may be used in the EFL classroom as problem solving activities. Games can be powerful language acquisition devices because they tend to lower the affective filter (Krashen, 1981) and thus increase the internalization of meaningful new material.

We are living in exciting times in computer assisted language learning and I entirely agree with Watt when he writes:

> We have much to learn in the next few years in order to use educational software to its full potential. If we limit ourselves to using computers solely to support existing and traditional goals and methods, we'll lose sight of some of the most important long-term advantages of educational computing.
>
> (Watt, 1982:38)

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